

REMARKS

Claims 1, 3-6, 8-23 and 30-36 are pending and rejected in this application. Claims 1, 3, 9, 11, 14, 30, 34 and 36 are amended hereby; and claims 44 and 45 are added hereby.

Responsive to the rejection of claims 1, 3-6, 8 and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,219,264 (Cox), Applicants have amended claims 1, 3 and 36, and submit that claims 1, 3-6, 8 and 36 are now in condition for allowance.

Cox discloses a fluid treating centrifugal apparatus and methods (Figs. 1-4) including an elongate centrifuge 1 having an outer shell 2 and inner cylinder 3. The surface of the bore of outer shell 2 is helically threaded or grooved, thereby presenting an undulating configuration. Cylinder 3 has its outer surface similarly grooved or threaded so that it presents an undulating configuration such that it has sufficient clearance to permit cylinder 3 to be slid into and out of shell 2 (column 2, lines 26-39). Assembly of cylinder 3 and shell 2 cause roots 4 and 6 of the respective members to form passages or channels 26 spiraling about the axis of centrifuge 1 from one end to the other. Each passage 26 includes a radially inner part 26a and radially outer part 26b, which communicate with one another between sleeves 19 and 20. In the zones of sleeves 19 and 20, passages 26a and 26b are separate from one another. Alternatively, it is understood that baffles 19 and 20 may be perforated. The mounting of centrifuge 1, for rotation about its longitudinal axis, includes a housing 28 having a cylindrical outer wall 29. Bearings 31 are interposed between shaft 9a and wall 30 and are retained in place by nut 32 threaded on shaft 9a. A seal 35 is interposed between members 32 and 33 to make the journal fluid tight (column 3, lines 28-50).

In contrast, claim 1 as amended, recites in part:

a filter media disposed within said filter, said filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Cox or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Cox discloses a fluid treating centrifuge apparatus and method including sleeves 19 and 20 which may be perforated. Sleeves 19 and 20 separate channels 26a and 26d from each other. In contrast, Applicants' invention has an embossed sheet that is spirally wound about an axis, which is significantly different from the spirally cut grooves in Cox having a baffle between the grooves respectively cut in an inner and outer cylinder. Therefore, Cox and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-6 and 8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 36 recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Cox or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Cox discloses a fluid treating centrifuge apparatus and method including sleeves 19 and 20 which may be perforated. Sleeves 19 and 20 separate channels 26a and 26d from each other. In contrast, Applicants' invention has an embossed sheet that is spirally wound about an axis, which is significantly different from the spirally cut grooves in Cox having a baffle between the grooves respectively cut in an inner and outer cylinder. Therefore, Cox and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

Responsive to the Examiner's rejection of claims 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Cox in view of U.S. Patent No. 5,656,164 (Vado et al.), Applicants have amended claim 9, and submit that claims 9 and 10 are now in condition for allowance.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing 2 and a motor 3 (Figs. 1 and 2). There are channels 12 in housing 2 which allow the entrance of a liquid that is to be centrifuged. The liquid, such as engine fuel oil, along with its impurities and water, enters through channels 12 and goes into cartridge 9, which is rotating with shaft 6 of motor 3. The heavier liquid, which is the water, remains within the cartridge, while the lighter liquid, the fuel oil, passes through channels 7 and 8 to be sent to the boat engine. Filter 11 eliminates solid impurities (column 2, line 41 through column 3, line 5).

In contrast, claim 9 recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Cox, Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Cox discloses a fluid treating centrifuge apparatus and method including sleeves 19 and 20 which may be perforated. Sleeves 19 and 20 separate channels 26a and 26d from each other. Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. In contrast, Applicants' invention has a filter media with an embossed sheet that is spirally wound about an axis, which is significantly different from the spirally cut grooves in Cox having a baffle between the grooves respectively cut in an inner and outer cylinder, and of the configuration of Vado et al. Therefore, Cox, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 9.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the

effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere.

Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 9 and claim 10 depending therefrom are now in condition for allowance, which is hereby respectfully requested.

Responsive to the Examiner's rejection of claims 1, 3-6, 8-18, 21-23 and 30-36 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,904,841 (Penny) in view of Vado et al. and U.S. Patent No. 2,427,733 (McCann), Applicants have amended claims 1, 3, 9, 11, 14, 30, 34 and 36, and submit that claims 1, 3-6, 8-18, 21-23 and 30-36 are now in condition for allowance.

Penny discloses a fluid circulation centrifugal cleaner with pressure regulator (Figs. 1(a) and 2(a)) including a base 11, a rotor 12 and a housing 14. Rotor 12 is mounted on a substantially vertical axis 13 for rotation thereabout. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Supply fluid is forced outwardly by rapid rotation of rotor 12 due to the reaction of the ejection of the supply fluid to sump 15 by way of rotor nozzles 18 and 19 in the base thereof (column 1, lines 23-38).

McCann discloses an oil filter including a primary filter body and having elements 70 and 72 wound over muslin 74. Strips 70-72 are wound up to a size which give it a radially compressed fit within cartridge shell 50 (column 4, lines 58-64). Fig. 2 illustrates a spirally

wound filter element that includes laminations of pulp 70 and layers of paper 72 (column 4, lines 35-45 and Fig. 2).

In contrast, claim 1 as amended, recites in part:

filter media disposed within said filter, said filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., McCann or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. McCann discloses an oil filter including a primary filter body and having elements wound over muslin. In contrast, Applicants' invention has an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, McCann and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons,

Applicants submit that claim 1, and claims 3-6 and 8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 9 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., McCann or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. McCann discloses an oil filter including a primary filter body and having elements wound over muslin. In contrast, Applicants' invention has an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, McCann and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 9.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons,

Applicants submit that claim 9, and claim 10 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 11 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., McCann or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. McCann discloses an oil filter including a primary filter body and having elements wound over muslin. In contrast, Applicants' invention has an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, McCann and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 11.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere.

Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons,

Applicants submit that claim 11, and claims 12 and 13 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet further contrast, claim 14 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., McCann or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. McCann discloses an oil filter including a primary filter body and having elements wound over muslin. In contrast, Applicants' invention has an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, McCann and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 14.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons,

Applicants submit that claim 14, and claims 15-18 and 21-23 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 30 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., McCann or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. McCann discloses an oil filter including a primary filter body and having elements wound over muslin. In contrast, Applicants' invention has an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, McCann and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 30.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere.

Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons,

Applicants submit that claim 30, and claims 31-33 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 34 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., McCann or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. McCann discloses an oil filter including a primary filter body and having elements wound over muslin. In contrast, Applicants' invention has an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, McCann and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 34.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons,

Applicants submit that claim 34, and claim 35 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet further contrast, claim 36 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., McCann or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. McCann discloses an oil filter including a primary filter body and having elements wound over muslin. In contrast, Applicants' invention has an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, McCann and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons,

Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3-6, 8-18, 21-23 and 30-36 under 35 U.S.C. § 103 as being unpatentable over Penny in view of Vado et al. and U.S. Patent No. 4,877,527 (Brownell), Applicants have amended claims 1, 3, 9, 11, 14, 30, 34 and 36, and submit that claims 1, 3-6, 8-18, 21-23 and 30-36, are now in condition for allowance.

Brownell discloses a liquid filter of spiral wound construction with alternate layers of a surface area media and a depth media (Figs. 1-3) including filtering media 16, which is wound circumferentially around center tube 12. Filtering media 16 includes a surface type paper filtering medium 18 and a depth type batt-like filtering medium 20. Paper medium 18 is manufactured in a conventional wet laid papermaking process from wood pulp. Medium 18 may additionally include fine diameter fiberglass fibers. Depth type batt-like filtering medium 20 includes discrete fibers that are blown through a tube and deposited randomly. The fibers are a mixture of varying diameters (column 2, lines 25-55).

In contrast, claim 1 as amended, recites in part:

a filter media disposed within said filter, said filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., Brownell or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. Brownell discloses a liquid filter of spiral wound construction with alternate layers of a surface area media and a depth media. In contrast, Applicants' invention has a filter media with an

embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, Brownell and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-6 and 8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 9 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., Brownell or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. Brownell discloses a liquid filter of spiral wound construction with alternate layers of a surface area media and a depth media. In contrast, Applicants' invention has a filter media with an

embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, Brownell and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 9.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere.

Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 9, and claim 10 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 11 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., Brownell or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. Brownell discloses a liquid filter of spiral wound construction with alternate layers of a surface area media and a depth media. In contrast, Applicants' invention has a filter media with an embossed sheet that is spirally wound about an axis, which is significantly different from the

construct of the cited prior art. Therefore, Penny, Vado et al, Brownell and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 11.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 11, and claims 12 and 13 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 14 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., Brownell or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. Brownell discloses a liquid filter of spiral wound construction with alternate layers of a surface area media and a depth media. In contrast, Applicants' invention has a filter media with an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, Brownell and any of the other cited

references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 14.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 14, and claims 15-8 and 21-23 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 30 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., Brownell or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. Brownell discloses a liquid filter of spiral wound construction with alternate layers of a surface area media and a depth media. In contrast, Applicants' invention has a filter media with an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, Brownell and any of the other cited

references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 30.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere.

Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 30, and claims 31-33 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 34 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., Brownell or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. Brownell discloses a liquid filter of spiral wound construction with alternate layers of a surface area media and a depth media. In contrast, Applicants' invention has a filter media with an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, Brownell and any of the other cited

references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 34.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 34, and claim 35 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 36 as amended, recites in part:

a filter media including an embossed sheet being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al., Brownell or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing and a motor. Penny discloses a fluid circulation centrifugal cleaner with pressure regulator. Brownell discloses a liquid filter of spiral wound construction with alternate layers of a surface area media and a depth media. In contrast, Applicants' invention has a filter media with an embossed sheet that is spirally wound about an axis, which is significantly different from the construct of the cited prior art. Therefore, Penny, Vado et al, Brownell and any of the other cited

references, alone or in combination fail to disclose, teach or suggest a filter media including an embossed sheet that is spirally arranged about the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for oil to flow through, allowing oil to proceed at a reduced rate, thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media and to gather in portions of the embossed sheet. The centrifugal force places the soot and/or other particles next to a wall of the embossed sheet to which they adhere. Additionally, the filter media/embossed sheet is replaceable. For the foregoing reasons, Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

Claims 19 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Penny in view of Vado et al. and McCann or Penny in view of Vado et al. and Brownell and in further view of U.S. Patent No. 4,353,499 (Simonds). However, claims 19 and 20 depend from claim 14 which is in condition for allowance for the reasons given above. Accordingly, Applicants submit that claims 19 and 20 are now in condition for allowance, which is hereby respectfully requested.

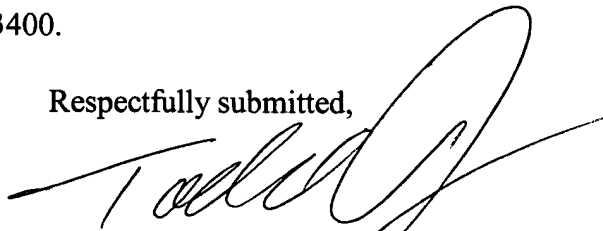
Claims 44 and 45 have been added to further protect Applicants' valuable intellectual property rights. The description of the embossed sheet having dimples and holes is supported in the specification as it describes the filter media on page 14. Claims 44 and 45 claim the features of holes and dimples in the embossed sheet. Since the claimed invention is supported by the specification no new matter has been added by the adding of claims 44 and 45. Applicants respectfully request the Examiner to examine the claims and allow them.

For the foregoing reasons, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorize that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,



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Registration No. 36,945

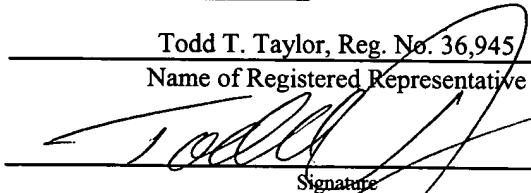
Attorney for Applicant

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: October 12, 2004.

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Name of Registered Representative



Signature

October 12, 2004

Date

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